

**A B S T R A C T**

A pump controller is disclosed for controlling a pump for a fluid medium such as water. The pump controller includes a metal substrate (11) adapted to

5 have a first side thereof exposed to the fluid medium and an insulating medium applied to a second side of the substrate. A pressure sensing means (12) including at least one pressure responsive element (R9, R10) is implemented on the insulating medium closely adjacent the substrate such that the pressure element is responsive to pressure of the fluid medium when the first side is

10 exposed to the fluid medium. A flow sensing means (13) including at least one source of heat (15) and at least one temperature responsive element (16) is implemented on the insulating medium closely adjacent the substrate, such that the temperature responsive element is responsive to flow of the fluid medium when the first side is exposed to the flow, with the fluid medium providing a sink

15 for the source of heat in a manner that is related to the flow. The pump controller includes switching means (17) for switching the pump on or off and a processing means (14) for receiving data from the pressure sensing means and the flow sensing means. The data is communicated via conductive tracks implemented on the insulating medium. The processing means is adapted to

20 process the data and to produce an output for driving the switching means. A housing for a sensor substrate having a wet side and a dry side and adapted to promote contact of the wet side with the pumped fluid medium and to substantially prevent contact of the dry side with the fluid medium is also disclosed.